

REMARKS

Claims 1-15 are pending. By this Amendment, claims 1, 2, 12, 14 and 15 are amended. No new matter has been added.

The attached Appendix includes a marked-up copy of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

I. THE CLAIMS ARE DEFINITE

Claims 1, 2, 12, 14 and 15 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. By this Amendment, claims 1, 2, 12, 14 and 15 are amended to replace the term "PDL" with the corresponding term "page description language". As set forth in the specification in the field of this invention, these terms are synonymous. Thus, this amendment to claims 1, 2, 12, 14 and 15 does not narrow the scope of the claims. Reconsideration and withdrawal of the rejection are respectfully requested.

II. THE CLAIMS DEFINE PATENABLE SUBJECT MATTER

Claims 1-6 and 8-10 are rejected under 35 U.S.C. §103(a) as obvious over U.S. Patent 5,588,095 to Dennis et al. Claim 7 is rejected under 35 U.S.C. §103(a) as obvious over Dennis et al. in view of U.S. Patent 5,859,956 to Sugiyama et al. Claims 11-15 are rejected under 35 U.S.C. §103(a) as obvious over Dennis et al. in view of U.S. Patent 5,805,174 to Ramchandran. These rejections are respectfully traversed.

In particular, Applicants assert that Dennis et al. fails to disclose, teach or suggest a reconstructing means that selects a predetermined way for reconstructing the print data according to a type of the print data as recited in independent claim 1, and as similarly recited in the independent claims 14 and 15.

Dennis et al. teaches a system for printer banding by which stored printer data files are processed to create a set of bandable primitives corresponding to an entire page to be printed. The set of bandable primitives are sequentially converted to a bit map data file for each of the bands. However, Applicants respectfully submit that Dennis et al. does not teach

the reconstructing means that selects a predetermined way of reconstructions according to a type of the print data, as recited in claims 1, 14 and 15. In fact, Dennis et al. only discloses processing the metafile and converting all print objects into bandable primitives for the entire page. That is, Dennis et al. discloses a band generator 52 that converts each band of the banded primitives data file into a single bit map data file for the entire page being processed. See Dennis et al., col. 4, lines 37-44. Thus, Dennis et al. fails to disclose or suggest the claimed reconstruction means, or even conceive of the existence of different types of print data to be banded. Accordingly, Dennis et al. fails to disclose, teach or suggest the reconstructing means ^{cd 7-9} that selects a predetermined way of reconstruction according to a type of the print data, as recited in claim 1, and as similarly recited in claims 14 and 15.

With respect to claim 12, Dennis et al. fails to disclose, teach or suggest the raster converting means that processes the page description language data according to a type of command indicated by the print description language data, as recited in claim 12.

As similarly stated above, Dennis et al. only discloses processing and converting all objects into a set of single bandable primitives. Accordingly, Dennis et al. also fails to disclose or suggest the raster converting means for processing the page description language data according to a type of command indicated by the page description language data, as recited in claim 12.

With respect to Sugiyama et al. and Ramchandran, these references fail to disclose or teach the reconstructing means that selects a predetermined way according to a type of print data, as recited in claims 1, and similarly recited in claims 14 and 15. Further, Sugiyama et al. and Ramchandran also fail to disclose or teach the raster converting means for processing the page description language data according to a type of command indicated by the page description language data, as recited in claim 12.

Applicants respectfully submit that none of Dennis et al., Sugiyama et al. or Ramchandran, nor any combination of these references, teaches, discloses or suggests all of the features recited in claims 1-15. Thus, the asserted combinations of Dennis et al, Sugiyama et al. and Ramchandran fail to render obvious the subject matter of claims 1-15 under 35 U.S.C. §103(a). Withdrawal of the various rejections of claims 1-15 under 35 U.S.C. §103(a) as being unpatable over the asserted combinations of Dennis et al., Sugiyama et al. and Ramchandran is respectfully requested.

III. CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-15 are respectfully requested.

Should the Examiner believe that anything further is necessary to place the application in condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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Attachment:
Appendix

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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APPENDIX

Changes to Claims:

The following are marked-up versions of the amended claims:

1. (Amended) An image processing apparatus comprising:

reconstructing means for reconstructing print data for instructing the contents of objects positioned in one page in band units that are obtained by dividing the page into a plurality of regions,

converting means for converting the data reconstructed by said reconstructing means into page description language~~PDL~~ data that is in a page description language form; and

transmitting means for transmitting the page description language~~PDL~~ data; wherein the reconstructing means selects a predetermined way of reconstruction according to a type of the print data.

2. (Amended) The image processing apparatus according to claim 1, wherein said reconstructing means includes:

storage means for storing print data for one page; and
a graphic library for generating data reconstructed in the band units by
by retrieving the contents stored in said storage means, and

wherein said converging means is a printer driver for converting data supplied in the band units from said graphic library into the ~~PDL~~ page description language data.

12. (Amended) An output apparatus having a structure ~~that PDL data described in~~ a page description language that correspond~~se~~corresponding to each object that is supplied in band units and obtained by dividing one page into a plurality of regions,

— ~~said output apparatus comprising:~~

receiving means for receiving the page description language~~PDL~~ data;

raster converting means for converting the page description language~~PDL~~ data received by said receiving means into raster data;

a buffer for storing, in band units, the raster data converted by said raster converting means; and

a printing mechanism for printing the objects on a printing sheet in accordance with the raster data read from said buffer;

wherein the raster converting means processes the page description language data according to a type of command indicated by the page description language data.

14. (Amended) An image processing system comprising:

an image processing apparatus including:

reconstructing means for dividing, in band units, print data that indicates~~indicating~~ contents of objects positioned in one page which is composed of a plurality of the bands and reconstructing print data in the band units;

_____ converting means for converting the data reconstructed by said reconstructing means into page description language~~PDL~~ data that is in a page description language form; and

transmitting means for transmitting the page description language~~PDL~~ data,

wherein the reconstructing means selects a predetermined way of the reconstruction according to a type of the print data; and

an output apparatus including:

receiving means for receiving the page description language~~PDL~~ data;

raster converting means for converting the page description language~~PDL~~ data received by said receiving means into raster data;

a buffer for storing, in the band units, the raster data converted by said raster converting means; and

a printing mechanism for printing the objects on a printing sheet in accordance with the raster data read from said buffer.

15. (Amended) An image processing method for an image processing system including an image processing apparatus and an output apparatus,

~~_____ said image processing method comprising:~~

~~_____ the steps which are performed by said image processing apparatus:~~

dividing, in band units, print data ~~that indicates~~indicating contents of objects positioned in one page which is composed of a plurality of the bands;

a ~~second step for reconstructing~~ the print data in the band units according to a type of the print data;

~~third step for converting reconstructed data into~~ page description language PDL data in a page description language form; and

~~a fourth step for transmitting the PDL data, and the steps which are performed by said output apparatus:~~

a ~~fifth step for receiving the PDL data;~~

a ~~sixth step for converting the~~ page description language PDL data ~~received by~~ said receiving means into raster data;

~~a seventh step for storing, in the band units, the raster data converted by said raster converting means~~ data; and

~~an eighth step for printing the objects on a printing sheet in accordance with~~ the stored raster data.